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TPWD News Release — Oct. 11, 2007

San Jacinto River Dioxin Site Proposed for Federal Cleanup

HOUSTON, Texas — The U.S. Environmental Protection Agency has proposed listing an abandoned toxic waste site in the San Jacinto River for the federal National Priorities List (NPL). If approved for inclusion on the NPL the site will be eligible for cleanup in the federal Superfund program.

"This listing results from the cooperative efforts of Texas Parks and Wildlife Department, Texas Commission on Environmental Quality and U.S. Environmental Protection Agency — Region 6 staff," said Patricia Radloff, Ph.D., TPWD water quality program leader. "Our agency is proud to have done the research that initiated the process. TCEQ took our information and moved quickly to authorize additional sampling, which confirmed very high levels of dioxin in the area. EPA verified the information and proposed the site for the NPL, with support from U.S. representatives Gene Green and Ted Poe. The proposed listing today thus represents the culmination of many people working for years to protect human health and public waters."

In early 2005, TPWD became aware of information that suggested waste pits in a sandbar in the San Jacinto River just north of the Interstate Highway 10 (I-10) bridge, including recent and historical photographs and maps of the area. Anecdotal evidence suggested that pits were operated there from the mid-1960's until around the mid-1970's to dispose of paper mill waste. Due to subsidence, the pits went underwater sometime in the 1970's.

The submerged waste pits represent a previously unidentified major source of dioxin and other toxins for the San Jacinto River, the Houston Ship Channel and Galveston Bay. Paper mill waste from the 1960's and 70's is known to contain high levels of dioxins and other toxic chemicals from chlorine bleaching processes then in use.

The potential presence of sediment contamination is an immediate concern since the San Jacinto River near the I-10 bridge is very active with respect to dredging, sand mining, and barge berthing. These activities may be spreading potentially contaminated sediments or resuspending dioxins in the water column. Therefore, scientists consider inclusion on the NPL paramount to remove this potential threat to the river, fish and wildlife and people.

"The discovery of this contaminant source and swift action to address it would make a significant contribution to remediate damage done to the health of the Galveston Bay ecosystem," stated Larry McKinney, Ph.D., TPWD coastal fisheries director. "If the site is listed for federal cleanup the human health benefits are clear, but we would also expect to see direct benefits for our fishery, especially for species like spotted seatrout."

In April 2005, TPWD wrote TCEQ advising officials there of the new information and requesting assistance to make sure appropriate measures were taken to protect fish and wildlife. TCEQ moved quickly and sampling under the Preliminary Assessment/Site Inspection (PASI) program at TCEQ was conducted that summer. A complete site inspection report, including sampling data analysis and other background information, was ready in early 2007.

In addition, TCEQ approved reallocating resources for the Houston Ship Channel Dioxin Total Maximum Daily Load (TMDL) project to sample a broad area around the I-10 Bridge. TMDL project sampling was conducted in August 2005 and results were published in January 2006. The PASI study found very high levels of dioxin in the waste pit area, while the TMDL sampling found elevated levels of dioxin over a much larger area.

The proposed listing stems from EPA's review of the state site inspection report. Federal scientists have said they agree the site presents a significant threat and must be cleaned up. In a letter dated July 26, 2007, Governor Rick Perry expressed the state's support for EPA's plan to add the polluted area to the priorities list.

The term dioxin is used to represent a family of environmentally persistent chlorinated organic chemicals. Dioxins are closely related to two other chemical families, furans and polychlorinated biphenyls (PCBs). These compounds are potent animal toxicants and represent a threat to aquatic life and human health at extremely low concentrations. While many organic chemicals are toxic at parts per million concentrations, dioxins and furans are known to be toxic in the parts per trillion and parts per quadrillion ranges.

In addition, dioxins and furans bioaccumulate in animal tissue and their tissue concentrations biomagnify as they move up the food chain. Dioxins can alter the fundamental growth and development of cells. In humans, adverse effects include suppression of the immune system, a variety of reproductive effects from reduced fertility to birth defects, chloracne, and cancer.

Since the 1970's, sources of dioxin have been greatly reduced, but some sources still exist in combustion of fossil fuels and wood, incineration of solid waste, and certain chemical manufacturing processes.

The Houston Ship Channel, including the lower San Jacinto River, and Upper Galveston Bay are known to be contaminated with dioxin. The Texas Department of State Health Services, formerly the Texas Department of Health, has issued several fish consumption advisories. In 1990, TDH issued a fish consumption advisory for all species of fish and blue crabs for dioxin, organochlorine pesticides and PCBs for the upper portion of the Houston Ship Channel including the San Jacinto River below the U.S. Highway 90 bridge.

In 2001, the agency issued an advisory for all species of catfish and blue crabs for dioxin for Upper Galveston Bay and the lower portion of the Houston Ship Channel. And in 2005, TDH issued an advisory for spotted seatrout for polychlorinated biphenyl compounds (PCBs) for the Houston Ship Channel including the San Jacinto River below the U.S. Highway 90 bridge, Tabbs Bay, and Upper Galveston Bay.

In response to the 1990 advisory, in 2000 TCEQ's precursor agency began a Total Maximum Daily Load (TMDL) project to identify sources of dioxin and determine the amount of dioxin that the Ship Channel can receive and still support its use as a fishery. Sampling

conducted as part of the TMDL project, and earlier sampling done as part of a Houston Ship Channel toxicity study, found high concentrations of dioxins in fish and crab tissue and in the sediments in the San Jacinto River near the I-10 bridge. The TMDL sampling also found high concentrations of dioxin in water there. In both studies the source of dioxin in or near the San Jacinto River could not be identified.

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On the Net:

- U.S. Environmental Protection Agency, Superfund program: <http://www.epa.gov/superfund/index.htm>
- Texas Commission on Environmental Quality, Houston Ship Channel Dioxin TMDL:
<http://www.tceq.state.tx.us/implementation/water/tmdl/26-hscdioxin.html>
- Texas Department of State Health Services, Seafood and Aquatic Life Consumption Bans and Advisories: <http://www.dshs.state.tx.us/seafood/survey.shtm#info>